

Patent
Docket No. 54069US010

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Howard R. Tolliver, Suman K. Patel,
Thomas V. Kusilek and Nagraj Koneripalli

For Reissue of 06,217,252 B1

Patent No.:

Filed: April 17, 2001

Group Art Unit:

Examiner:

For: WATER-RESISTANT
TRANSPORTATION SURFACE
MARKING METHOD AND
MATERIALS

REISSUE DECLARATION, POWER OF ATTORNEY AND PETITION

BOX REISSUE
Commissioner for Patents
Washington, D.C. 20231

I, a below named inventor, depose and say that:

1. My residence, citizenship and address are as stated below.
2. I believe that the other named inventors below and I are the original, first, and joint inventors or discoverers of the invention or discovery in the WEAR-RESISTANT TRANSPORTATION SURFACE MARKING METHOD AND MATERIALS described and claimed in United States Letters Patent No. 6,217,252 B1, issued April 17, 2001 (the "Original Patent"), and in the above-identified application for which I solicit a reissue patent.
3. I have reviewed and understand the contents of the specification of the above-identified application, including the claims, as amended by any amendment specifically referred to herein.

4. I acknowledge my duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.
5. I hereby appoint Gregory D. Allen (Reg. No. 35,048), Alan Ball (Reg. No. 42,286), Scott A. Bardell (Reg. No. 39,594), Carolyn A. Bates (Reg. No. 27,853), Bruce E. Black (Reg. No. 41,622), Colene E. H. Blank (Reg. No. 41,056), Jennie G. Boeder (Reg. No. 28,952), William J. Bond (Reg. No. 32,400), Arthur J. Brady (Reg. No. 42,356), Stephen W. Buckingham (Reg. No. 30,035), John A. Burtis (Reg. No. 39,924), Melissa E. Buss (Reg. No. 47,465), Gerald F. Chernivec (Reg. No. 26,537), James D. Christoff (Reg. No. 31,492), Philip Y. Dahl (Reg. No. 36,115), Janice L. Dowdall (Reg. No. 31,201), Lisa M. Fagan (Reg. No. 40,601), Carolyn A. Fischer (Reg. No. 39,091), Yen T. Florczak (Reg. No. 45,163), Darla P. Fonseca (Reg. No. 31,783), Melanie G. Gover (Reg. No. 41,793), Christopher D. Gram, (Reg. No. 43,643), Gary L. Griswold (Reg. No. 25,396), Doreen S. L. Gwin (Reg. No. 35,580), Michaela A. Hakamaki (Reg. No. 40,011), Karl G. Hanson (Reg. No. 32,900), Dean M. Harts (Reg. No. 47,634), Néstor F. Ho (Reg. No. 39,460), Rudolph P. Hofmann, Jr. (Reg. No. 38,187), Robert W. Hoke (Reg. No. 29,226), Mary Susan Howard (Reg. No. 38,729), Stephen C. Jensen (Reg. No. 35,207), Robert H. Jordan (Reg. No. 31,973), Harold C. Knecht III (Reg. No. 35,576), Kent S. Kokko (Reg. No. 33,931), Andrew J. Leon (Reg. No. 46,869), Douglas B. Little (Reg. No. 28,439), Eloise J. Maki (Reg. No. 33,418), Michelle M. Michel (Reg. No. 33,968), William D. Miller (Reg. No. 37,988), Peter L. Olson (Reg. No. 35,308), Daniel R. Pastirik (Reg. No. 33,025), David B. Patchett (Reg. No. 39,326), Robert J. Pechman (Reg. No. 45,002), Carolyn V. Peters (Reg. No. 33,271), Scott R. Pribnow (Reg. No. 43,869), Ted K. Ringsred (Reg. No. 35,658), Steven E. Skolnick (Reg. No. 33,789), Robert W. Sprague (Reg. No. 30,497), Brian E. Szymanski (Reg. No. 39,523), James J. Trussell (Reg. No. 37,251), Lucy C. Weiss (Reg. No. 32,834), Bradford B. Wright (Reg. No. 34,459), Kimberly S. Zillig (Reg. No. 46,346) and David R. Cleveland (Reg. No. 29,524) as my attorneys or agents, with full powers (including the powers of appointment, substitution and revocation), to prosecute this application and any division, continuation, continuation-in-part, reexamination or reissue thereof, and to transact

all business in the Patent and Trademark Office connected therewith; the mailing address and the telephone number of the above mentioned attorneys or agents are:

Attention: Carolyn A. Fischer
Office of Intellectual Property Counsel
3M Innovative Properties Company
P.O. Box 33427
St. Paul, Minnesota 55133-3427
Telephone 612-575-3915

6. I pray that I be allowed to surrender the Original Patent, and that Letters Patent be reissued to me for the same invention upon the accompanying amended specification.
7. I believe the Original Patent to be partly inoperative by reason of my claiming less in the Original Patent than I had a right to claim.
8. The errors that render the Original Patent partially inoperative arose from inadvertence, accident or mistake, without any fraudulent or deceptive intention on my part.
9. The errors involve the recitation in the claims of the Original Patent that olefin polymers and copolymers should have "a number average molecular weight greater than 10,000". This recitation is preferred but not required. Analytical measurements made at the request of Dr. Suman Patel (one of the below-named inventors) after issuance of the Original Patent established that this recitation erroneously excludes useful olefin materials including at least some of those exemplified in the Original Patent. The measurements determined the number average molecular weight (Mn) of the olefin polymers and copolymers in the working examples of the Original Patent, using gel permeation chromatography and a polystyrene standard. PRIMACOR™ 5990I ethylene acrylic acid copolymer (a product believed to be the same as PRIMACOR 5990 as used in Examples 1, 2 and 4 and Runs 3-3 and 3-4 of the Original Patent) had an Mn of about 9,740. NUCREL™ 699 ethylene methacrylic acid copolymer (used in Runs 3-3 and 3-4 of the Original Patent) had an Mn of about 6,220. EXXON™ 3505 polypropylene (used in Run Nos. 8-1 through 8-3 of the Original Patent) had an Mn of about 28,800. AMOCO™ 1441 polypropylene (used in Run Nos. 8-4 and 8-9 of the Original Patent) had an Mn of about 17,100.

10. A divisional application was not filed for non-elected claims 9-34, 36 and 37 of the Original Patent. Those claims involved kits, transportation surface markers and marked transportation surfaces, and each such claim recited “olefin polymers and copolymers having a number average molecular weight greater than 10,000”. The accompanying reissue application includes kit claims 20 – 32 and transportation surface marker claims 33 – 45, but such claims do not recite “olefin polymers and copolymers having a number average molecular weight greater than 10,000”.

11. Claim 10 is a new independent claim, reciting:

- a. “A method for marking a transportation surface comprising the steps of:
 - a) heating the surface to a temperature above ambient temperature;”

This language of claim 10 is supported in the Original Patent at, for example, col. 2, lines 20 – 23.

- b. “flame spraying onto the surface a finely-divided, free flowing powder binder material comprising acrylic polymer or copolymer, olefin polymer or copolymer, urethane polymer or copolymer, curable epoxy resin, ester polymer or copolymer, or blend thereof and a particulate topcoat or particulate filler comprising reflective elements, skid-resistant particles, magnetizable particles or mixture thereof; and”

This language of claim 10 is supported in the Original Patent at, for example, col. 2, lines 25 – 32; col. 3, lines 39 – 49 and 61 – 67; col. 6, lines 51 – 54; col. 7, line 59 through col. 9, line 10 and col. 11, line 58 through col. 12, line 19.

- c. “allowing the thus-applied materials to cool and form a marker in which the binder adheres directly to the surface.”

This language of claim 10 is supported in the Original Patent at, for example, col. 2, lines 39 – 41.

12. Claim 11 is a new dependent claim reciting that “the applied materials are postheated after they are applied to the surface.” This language of claim 11 is supported in the Original Patent at, for example, col. 2, line 38 and col. 6, lines 21 - 26.

13. Claim 12 is a new dependent claim reciting that “the binder is thermosettable.”

This language of claim 12 is supported in the Original Patent at, for example, col. 7, lines 35 – 45.

14. Claim 13 is a new dependent claim reciting that “the binder comprises a dry powder blend.” This language of claim 13 is supported in the Original Patent at, for example, col. 3, line 67 through col. 4, line 2 and col. 9, lines 11 – 21.

15. Claim 14 is a new dependent claim reciting that “the blend comprises curable epoxy resin and olefin polymer or copolymer.” This language of claim 14 is supported in the Original Patent at, for example, col. 9, lines 11 – 13.

16. Claim 15 is a new dependent claim reciting that “the blend comprises acrylic polymer or copolymer and one or more of a urethane or ester polymer or copolymer.” This language of claim 15 is supported in the Original Patent at, for example, col. 9, lines 2 – 5.

17. Claim 16 is a new dependent claim reciting that “the blend comprises acrylic polymer or copolymer and ethylene acrylic acid or ethylene methacrylic acid copolymer.” This language of claim 16 is supported in the Original Patent at, for example, col. 7, line 59 through col. 8, line 12 and col. 8, line 66 through col. 9, line 5.

18. Claim 17 is a new dependent claim reciting that “the blend comprises a mixture of thermosettable and thermoplastic materials.” This language of claim 17 is supported in the Original Patent at, for example, col. 7, lines 45 – 48.

19. Claim 18 is a new dependent claim reciting that “the binder comprises an ethylene acrylic acid or ethylene methacrylic acid copolymer and the particulate filler or particulate topcoat comprise reflective elements and skid-resistant particles.” This language of claim 18 is supported in the Original Patent at, for example, col. 2, lines 34 – 36; col. 8, lines 13 – 27 and col. 11, line 58 through col. 12, line 5.

20. Claim 19 is a new dependent claim reciting that “the marker comprises two or more layers.” This language of claim 19 is supported in the Original Patent at, for example, col. 4, lines 40 – 53.

21. Claim 20 is a new independent claim reciting a “kit comprising one or more containers comprising finely-divided, free flowing, flame-sprayable, powder binder material comprising acrylic polymer or copolymer, urethane polymer or copolymer, curable epoxy resin, ester polymer or copolymer, or blend thereof, together with a particulate topcoat or particulate filler comprising reflective elements, skid-resistant particles, magnetizable particles or mixture thereof.” This language of claim 20 is supported in the Original Patent at, for example, col. 2, lines 42 – 53.
22. Claim 21 is a new dependent claim reciting that “the binder is thermosettable.” As with claim 12, this language of claim 21 is supported in the Original Patent at, for example, col. 7, lines 35 – 45.
23. Claim 22 is a new dependent claim reciting that “the binder comprises curable epoxy resin.” This language of claim 22 is supported in the Original Patent at, for example, col. 2, line 49.
24. Claim 23 is a new dependent claim reciting that “the binder comprises a dry powder blend.” As with claim 13, this language of claim 23 is supported in the Original Patent at, for example, col. 3, line 67 through col. 4, line 2 and col. 9, lines 11 – 21.
25. Claim 24 is a new dependent claim reciting that “the blend comprises curable epoxy resin and the olefin polymer or copolymer.” As with claim 14, this language of claim 24 is supported in the Original Patent at, for example, col. 9, lines 11 – 13.
26. Claim 25 is a new dependent claim reciting that “the blend comprises acrylic polymer or copolymer and one or more of a urethane or ester polymer or copolymer.” As with claim 15, this language of claim 25 is supported in the Original Patent at, for example, col. 9, lines 2 – 5.
27. Claim 26 is a new dependent claim reciting that “the blend comprises acrylic polymer or copolymer and ethylene acrylic acid or ethylene methacrylic acid copolymer.” As with claim 16, this language of claim 26 is supported in the Original Patent at, for example, col. 7, line 59 through col. 8, line 12 and col. 8, line 66 through col. 9, line 5.

28. Claim 27 is a new dependent claim reciting that “the blend comprises a mixture of thermosettable and thermoplastic materials.” As with claim 17, this language of claim 27 is supported in the Original Patent at, for example, col. 7, lines 45 – 48.
29. Claim 28 is a new dependent claim reciting that “the binder has a melt index greater than about 200.” This language of claim 28 is supported in the Original Patent at, for example, col. 7, lines 30 – 34.
30. Claim 29 is a new dependent claim reciting that “the melt index is greater than about 500.” This language of claim 28 is supported in the Original Patent at, for example, col. 7, lines 30 – 34.
31. Claim 30 is a new dependent claim reciting that “the kit components comprise two containers, one comprising binder and the other comprising reflective elements or skid-resistant particles.” This language of claim 30 is supported in the Original Patent at, for example, col. 3, lines 64 – 67; col. 6, lines 43 – 48 and col. 10, lines 12 – 15.
32. Claim 31 is a new dependent claim reciting that “the kit components are a substantially uniform powder mixture in a single container.” This language of claim 31 is supported in the Original Patent at, for example, col. 3, line 67 through col. 4, line 2; col. 6, lines 43 – 51 and col. 10, lines 12 – 15.
33. Claim 32 is a new dependent claim reciting a kit comprising “reflective elements and skid-resistant particles, and further comprising pigment and an extending or reinforcing filler comprising calcium carbonate, alumina having a particle diameter less than 150 mm, wollastonite, glass fibers, or substantially glassy particles.” This language of claim 32 is supported in the Original Patent at, for example, col. 6, lines 43 – 48 and col. 11, line 58 through col. 12, line 5.
34. Claim 33 is a new independent claim reciting:
 - a. A “Transportation surface marker comprising”. This language of claim 33 is supported in the Original Patent at, for example, col. 2, lines 54 – 55;
 - b. “a binder comprising a blend of:
 - i) curable epoxy resin and olefin polymer or copolymer,

- ii) acrylic polymer or copolymer and one or more of a urethane or ester polymer or copolymer,
- iii) acrylic polymer or copolymer and olefin polymer or copolymer, with".

This language of claim 32 is supported in the Original Patent at, for example, col. 2, lines 54 – 60 and col. 8, line 66 through col. 9, line 13.

- c. "a particulate topcoat or particulate filler comprising reflective elements, skid-resistant particles, magnetizable particles, or mixture thereof, wherein the binder adheres directly to transportation surface" This language of claim 20 is supported in the Original Patent at, for example, col. 2, lines 54 – 65.

35. Claim 34 is a new dependent claim reciting that "the binder is thermoset." As with claims 12 and 21, this language of claim 34 is supported in the Original Patent at, for example, col. 7, lines 35 – 45.

36. Claim 35 is a new dependent claim reciting that "the marker is about 0.13 to about 2 mm thick and has a generally planar upper surface." This language of claim 35 is supported in the Original Patent at, for example, col. 5, lines 34 – 36 and 54 – 57.

37. Claim 36 is a new dependent claim reciting that "the topcoat has a reflective element coating weight of about 0.04 to about 0.17 kg/m²." This language of claim 36 is supported in the Original Patent at, for example, col. 10, lines 5 – 8.

38. Claim 37 is a new dependent claim reciting that "the marker comprises skid-resistant particles having a particle diameter between about 300 and about 1500 mm, and the marker has surface frictional properties of at least about 45 British Pendulum Number." This language of claim 37 is supported in the Original Patent at, for example, col. 10, lines 35 – 41.

39. Claim 38 is a new dependent claim reciting that "the marker comprises two or more layers." This language of claim 38 is supported in the Original Patent at, for example, col. 4, lines 40 – 47 and col. 12, lines 30 – 31.

40. Claim 39 is a new dependent claim reciting that "the layers have different colors and part of the one layer is visible through the other layer." This language of claim 39 is supported in the Original Patent at, for example, col. 4, lines 40 – 47.

41. Claim 40 is a new independent claim reciting a “Transportation surface marker comprising a binder comprising a blend of thermosettable and thermoplastic materials, and a particulate topcoat or particulate filler comprising reflective elements, skid-resistant particles, magnetizable particles, or mixture thereof, wherein the binder adheres directly to the transportation surface.” This language of claim 40 is supported in the original patent at, for example, col. 2, lines 54 – 65; col. 7, lines 45 – 48 and col. 11, line 58 through col. 12, line 19.
42. Claim 41 is a new dependent claim reciting that “the marker is about 0.13 to about 2 mm thick and has a generally planar upper surface.” Like claim 35, this language of claim 41 is supported in the Original Patent at, for example, col. 5, lines 34 – 36 and 54 – 57.
43. Claim 42 is a new dependent claim reciting that “the topcoat has a reflective element coating weight of about 0.04 to about 0.17 kg/m².” Like claim 36, this language of claim 42 is supported in the Original Patent at, for example, col. 10, lines 5 – 8.
44. Claim 43 is a new dependent claim reciting that “the marker comprises skid-resistant particles having a particle diameter between about 300 and about 1500 mm, and the marker has surface frictional properties of at least about 45 British Pendulum Number.” Like claim 37, this language of claim 43 is supported in the Original Patent at, for example, col. 10, lines 35 – 41.
45. Claim 44 is a new dependent claim reciting that “the marker comprises two or more layers.” Like claim 38, this language of claim 44 is supported in the Original Patent at, for example, col. 4, lines 40 – 47 and col. 12, lines 30 – 31.
46. Claim 45 is a new dependent claim reciting that “the layers have different colors and part of the one layer is visible through the other layer.” Like claim 39, this language of claim 45 is supported in the Original Patent at, for example, col. 4, lines 40 – 47.
47. I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both,

under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.



Howard R. Tolliver 11/6/01

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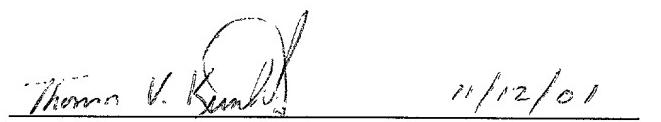
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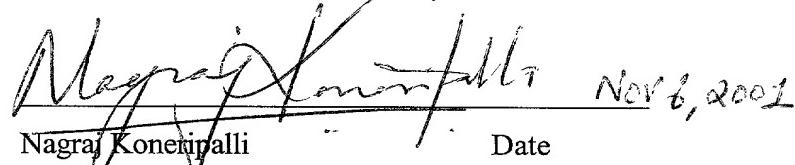
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Patent
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In re Application of:

Howard R. Tolliver, Suman K. Patel,
Thomas V. Kusilek and Nagraj Koneripalli
For Reissue of Patent No.: 6,217,252 B1
Date Issued: April 17, 2001
Serial No.:
Filed:
For: WEAR-RESISTANT TRANSPORTATION SURFACE MARKING METHOD
AND MATERIALS

Group Art Unit:

Examiner:

CONSENT OF THE ASSIGNEE,
STATEMENT OF NON-ASSIGNMENT, AND
OFFER TO SURRENDER ORIGINAL PATENT

BOX REISSUE
Commissioner for Patents
Washington, DC 20231

Dear Sir:

Filed herein is a statement under 37 CFR 3.73(b) in connection with the above-identified application for reissue of original U.S. Patent No. 6,217,252 B1 (the "Original Patent").

The written consent of all assignees and inventors owning an undivided interest in the Original Patent has been obtained for the application for reissue.

The assignee owing an undivided interest in the Original Patent is 3M Innovative Properties Company (a company incorporated under the laws of the state of Delaware) by virtue of the following chain of title:

1. An initial assignment from Howard R. Tolliver, Suman K. Patel, Thomas V. Kusilek and Nagraj Koneripalli to Minnesota Mining and Manufacturing Company (a company incorporated under the laws of the state of Delaware), recorded on August 11, 1998, at reel 9382, frame 0975, and
2. A subsequent assignment from Minnesota Mining and Manufacturing Company to 3M Innovative Properties Company, recorded on October 20, 2000, at reel 11232, frame 0263.

The assignee consents to the application for reissue, and hereby offers to surrender the Original Patent. The Original Patent does not accompany this Offer to Surrender, but will be supplied once this Reissue application is allowed.

Registration Number 27,583	Telephone Number 651-733-1523
Date <i>Nov. 12, 2001</i>	

Respectfully submitted,

By Carolyn A. Bates
Carolyn A. Bates
Assistant Secretary
3M Innovative Properties Company

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